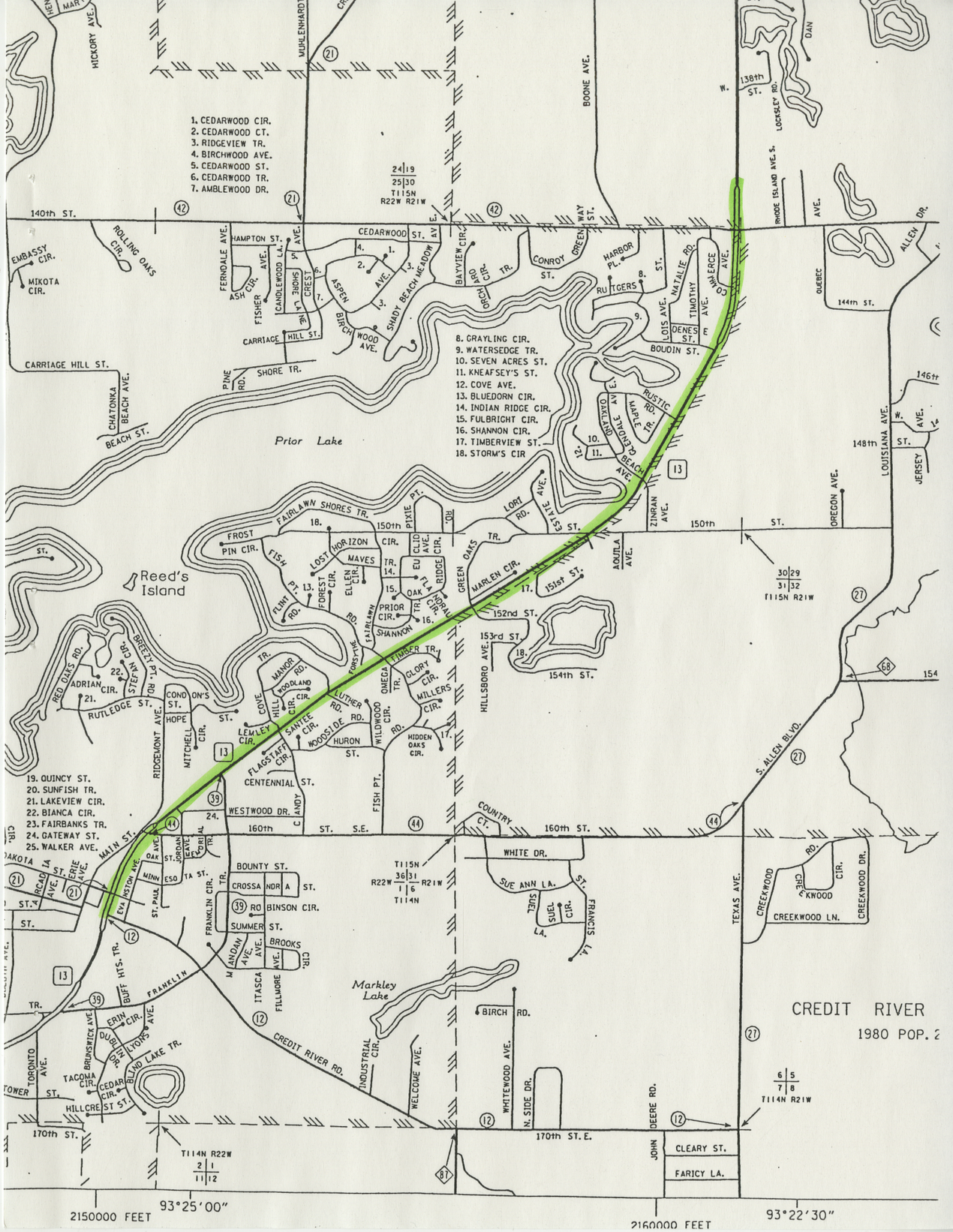
MN DEPT OF TRANSPORTATION
3 0314 00022 5598

Transportation Analysis

TA-M379
S.P. 7001-64
T.H. 13 From Dakota Avenue to C.S.A.H. 42

PREPARED BY
THE MINNESOTA DEPARTMENT OF TRANSPORTATION
PROGRAM MANAGEMENT DIVISION
TRAFFIC FORECASTS SECTION


1. CEDARWOOD CIR.
2. CEDARWOOD CT.
3. RIDGEVIEW TR.
4. BIRCHWOOD AVE.
5. CEDARWOOD ST.
6. CEDARWOOD TR.
7. AMBLEWOOD DR.
8. GRAYLING CIR.
9. WATERSEDGE TR.
10. SEVEN ACRES ST.
11. KNEAFSEY'S ST.
12. COVE AVE.
13. BLUEDORN CIR.
14. INDIAN RIDGE CIR.
15. FULBRIGHT CIR.
16. SHANNON CIR.
17. TIMBERVIEW ST.
18. STORM'S CIR
19. QUINCY ST.
20. SUNFISH TR.
21. LAKEVIEW CIR.
22. BIANCA CIR.
23. FAIRBANKS TR.
24. GATEWAY ST.
25. WALKER AVE.
24|19
25|30
T115N R22W R21W
30|29
31|32
T115N R21W
T114N R22W
2|1
11|12
6|5
7|8
T114N R21W
T115N R22W 36|31 1|6 R21W T114N
Prior Lake
Reed's Island
Markley Lake
CREDIT RIVER
1980 POP. 2
140th ST.
144th ST.
146th
148th
150th ST.
151st ST.
152nd ST.
153rd ST
154th ST.
154
160th ST.
160th ST. S.E.
170th ST.
170th ST. E.
138th ST. W.
HICKORY AVE.
MUHLENHARDT
BOONE AVE.
LOCKSLEY RD.
RHODE ISLAND AVE. S.
DAN
ALLEN DR.
QUEBEC
LOUISIANA AVE.
JERSEY
OREGON AVE.
S. ALLEN BLVD.
EMBASSY CIR.
MIKOTA CIR.
ROLLING OAKS CIR.
FERNDALE AVE.
ASH CIR.
HAMPTON ST.
CANDLEWOOD LA.
SHORE CREST
FISHER AVE.
CEDARWOOD ST.
ASPEN
BIRCH
WOOD AVE.
SHADY BEACH MEADOW
BAYVIEW CIR.
ORCHARD CIR.
TR.
CONROY WAY
ST.
HARBOR PL.
RUTGERS
ST.
NATALIE RD.
LOIS AVE.
TIMOTHY AVE.
OENES ST.
LAWRENCE AVE.
BOUDIN ST.
CARRIAGE HILL ST.
PINE RD.
SHORE TR.
CHATONKA BEACH AVE.
BEACH ST.
OAKDALE AVE.
MAPLE TR.
RUSTIC RD.
DEAD OAK
FAIRLAWN SHORES TR.
FROST PIN CIR.
FISH
LOST
HORIZON CIR.
MAVES TR.
ELLEN CIR.
FOREST CIR.
FLINT RD.
PRIOR CIR.
SHANNON TR.
FAIRLAWN RD.
FOREST
PIXIE PT.
CLIO AVE.
EUCLID CIR.
RIDGE TR.
OAK TR.
TERRACE CIR.
GREEN OAKS TR.
MARLEN CIR.
LORT RD.
ESTATE ST.
AQUILA AVE.
ZINRAN AVE.
RED OAKS RD.
ADRIAN CIR.
RUTLEDGE ST.
STEFFAN CIR.
BREEZY PT. RD.
RIDGEMONT AVE.
MITCHELL CIR.
CONDON'S ST.
HOPE
COVE
HILL CIR.
MANOR
WOODLAND CIR.
LEMLEY CIR.
SANTEE CIR.
LUTHER RD.
WOODSIDE RD.
HURON ST.
WILDWOOD RD.
OMEGA TR.
FLAGSTAFF CIR.
CENTENNIAL ST.
HIDDEN OAKS CIR.
MILLERS CIR.
GLORY CIR.
TIMBER TR.
HILLSBORO AVE.
FISH PT.
CANDY
WESTWOOD DR.
MAIN ST.
DAKOTA
ERIE AVE.
ST. JORDAN
OAK
ST. PAUL
MINN
ESOTA ST.
ASTON AVE.
EVA
BOUNTY ST.
CROSSA NDRA ST.
ROBINSON CIR.
SUMMER ST.
FRANKLIN CIR.
TR.
MANDAN AVE.
ITASCA AVE.
FILLMORE AVE.
BROOKS CIR.
BUFF HTS. TR.
FRANKLIN
ERIN CIR.
DUBLIN DR.
LYONS AVE.
BRUNSWICK AVE.
TACOMA CIR.
CEDAR CIR.
BLIND LAKE TR.
HILLCREST ST.
TORONTO AVE.
TOWER ST.
CREDIT RIVER RD.
INDUSTRIAL CIR.
WELCOME AVE.
BIRCH RD.
WHITEWOOD AVE.
N. SIDE DR.
DEERE RD.
JOHN
CLEARY ST.
FARICY LA.
WHITE DR.
SUE ANN LA.
SUEL CIR.
SUEL LA.
FRANCIS LA.
TEXAS AVE.
CREEKWOOD CIR.
CREEKWOOD RD.
CREEKWOOD DR.
CREEKWOOD LN.
COUNTRY CT.
2150000 FEET
93°25'00"
2160000 FEET
93°22'30"

DEPARTMENT OF TRANSPORTATION **STATE OF MINNESOTA**
OFFICE MEMORANDUM

TO : Tim Henkel
Transportation Planner
Metro District - Golden Valley

January 4, 1991

FROM : George Cepress, State Traffic Forecast Engr. 296-0217
Traffic Forecast Section

SUBJECT: TA-M379 S.P. 7001-64
TH 13 from Dakota Avenue to CSAH 42 (Prior Lake)

Projected Average Weekday Traffic (AWDT) and Peak Hour (AM and PM) Volumes for the years 1995 and 2015 on the above subject route are presented in schematic form for the "No Build" and "Build" options as follows:

1) "No Build" - 1995 - Figures 1 through 5
2) "No Build" - 2015 - Figures 6 through 10
3) "Build" - 1995 - Figures 11 through 15
4) "Build" - 2015 - Figures 16 through 20

Volumes shown for the "No Build" option are based on the following data sources:

1) Peak period (6:00 - 9:00 AM and 3:00 - 6:00 PM) turning movement counts taken in July, August and September of 1990 by Metro District (Golden Valley) staff at all of the "No Build" intersections shown except for Dakota Avenue.

2) Peak period (6:00 - 9:00 AM and 3:00 - 6:00 PM) turning movement count taken in December of 1989 by Metro District (Golden Valley) staff at the Dakota Avenue intersection with TH 13.

3) Raw 48 Hour directional counts taken in July of 1989 by Mn/DOT at the following locations on TH 13:

   North of CSAH 42
   South of CSAH 42
   South of CSAH 39
   South of CSAH 44
   South of Dakota Avenue

4) "Current" (1988) and Historic Mn/DOT Average Daily Traffic (ADT) Flow Map Volumes.

5) "Current" (1987) and Historic MSAS (Prior Lake and Savage) ADT Flow Map Volumes.

6) Field trip survey of the area by Traffic Forecast Section staff to determine extent of current development and potential for future development.

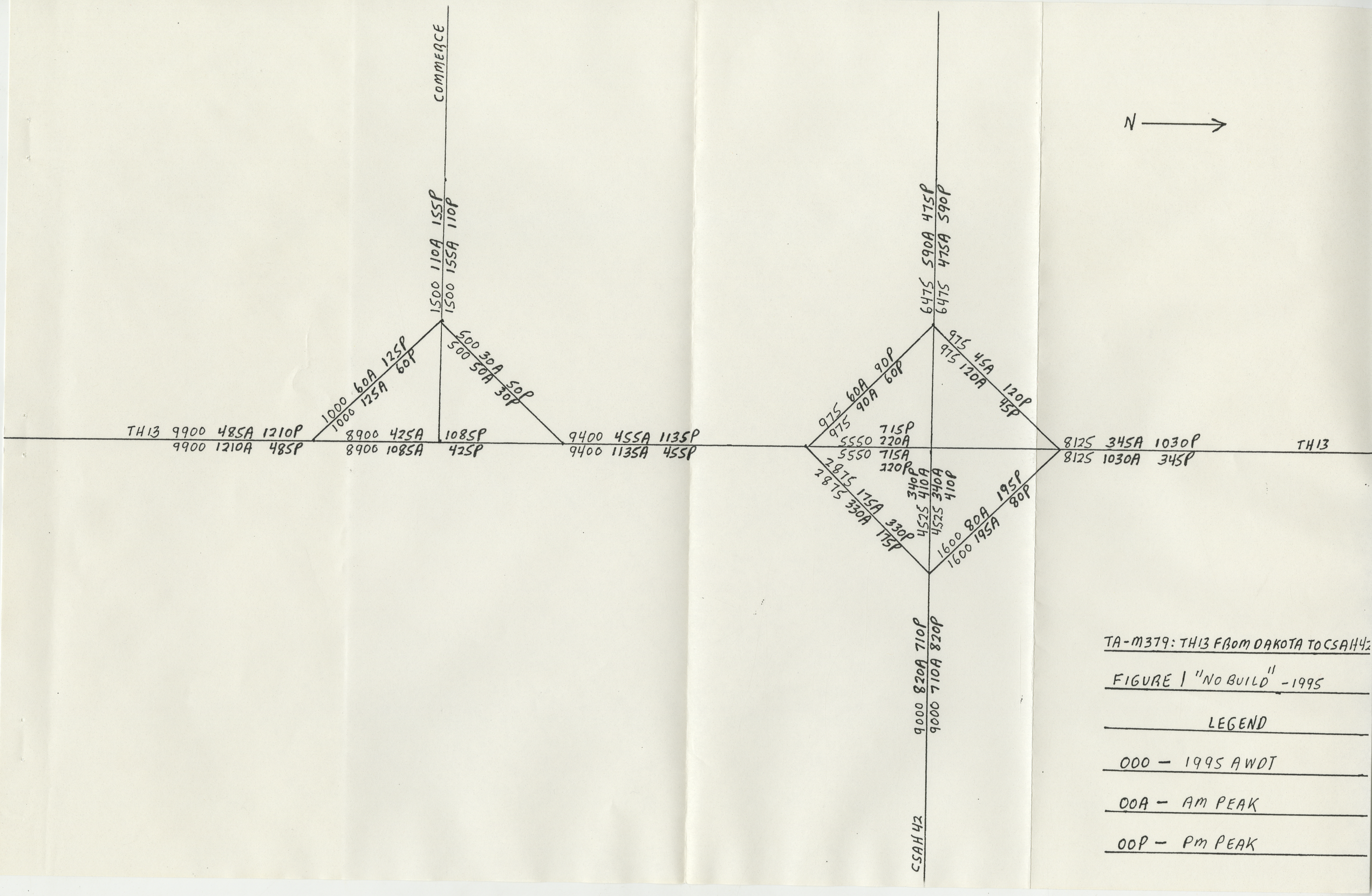
7) Model assignments of computer routed AWDT for the years 1988 and 2010, i.e., 1988B/4A3 and 2010F/4A3.

Volumes shown for the "Build" option were developed from the "No Build" option.

In addition to the AWDT and Peak Hour Volumes shown on Figure 1 through 20, I am enclosing a cumulative ESAL report and associated worksheets for Segments A and B for pavement type and design determinations on the subject route.

If you have additional questions, please contact Jim Page at 296-1626.

Enclosure



TA-M379: TH13 FROM DAKOTA TO CSAH 42

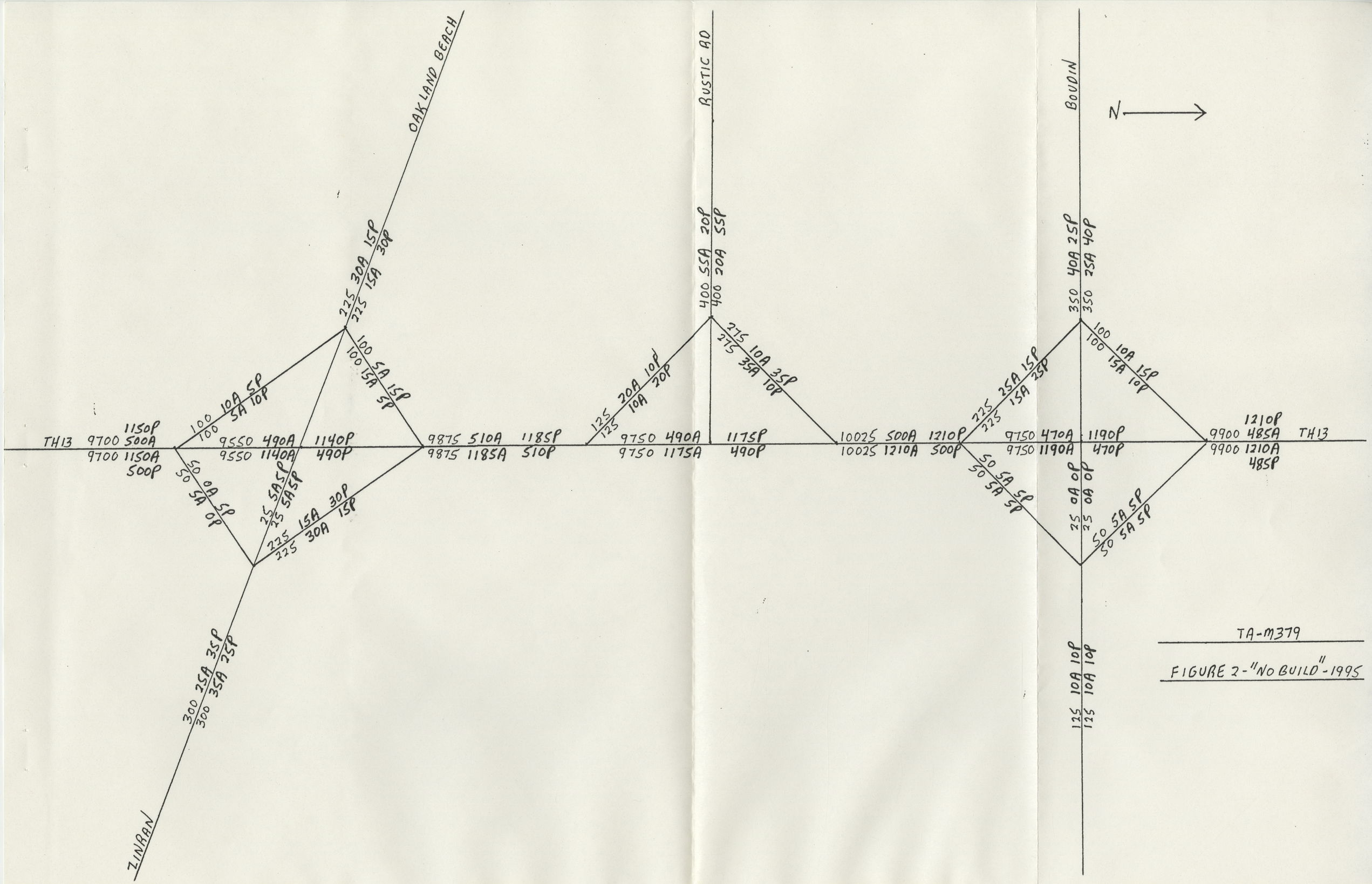
FIGURE 1 "NO BUILD" - 1995

LEGEND

000 – 1995 AWDT

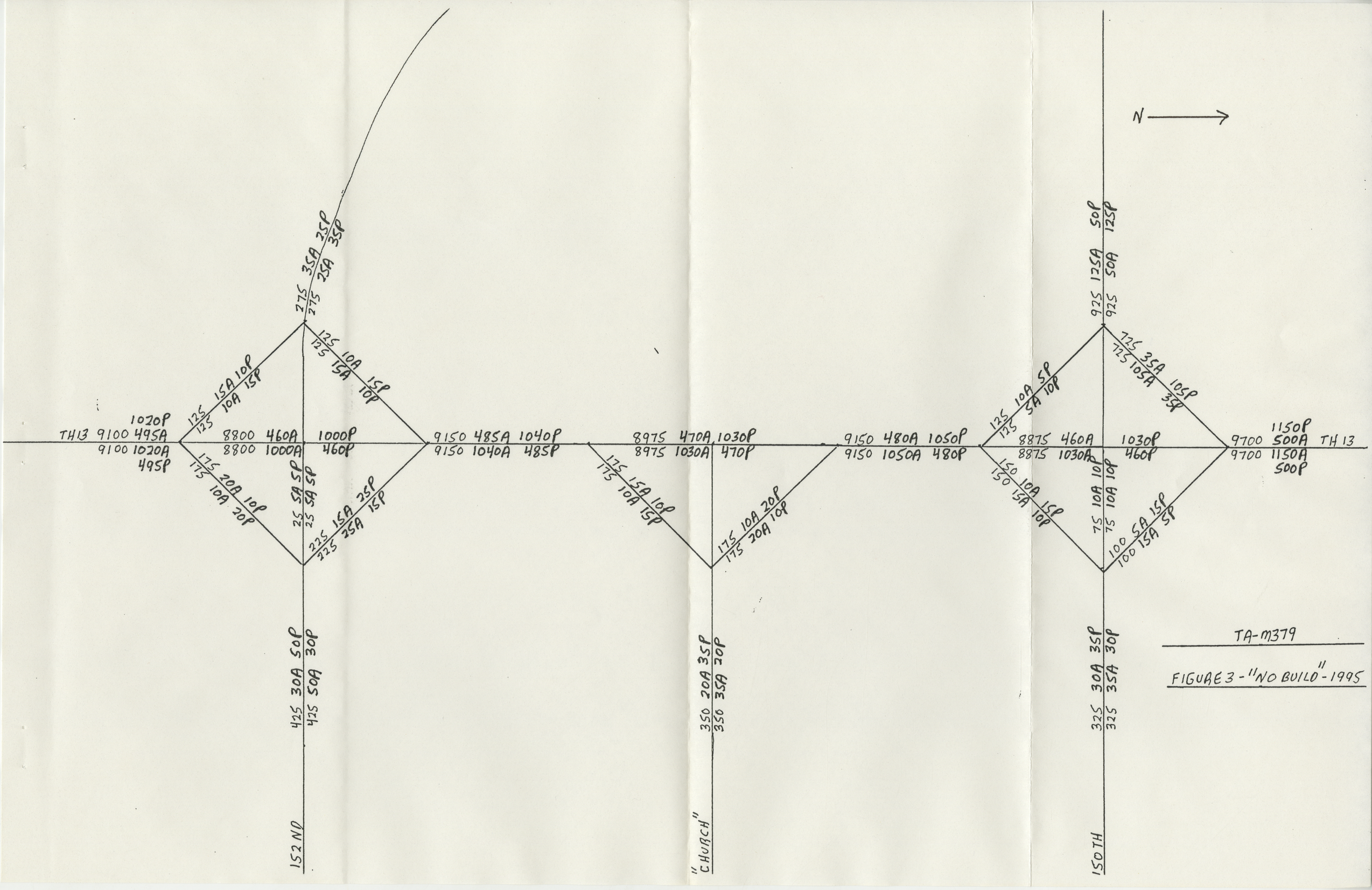
00A – AM PEAK

00P – PM PEAK



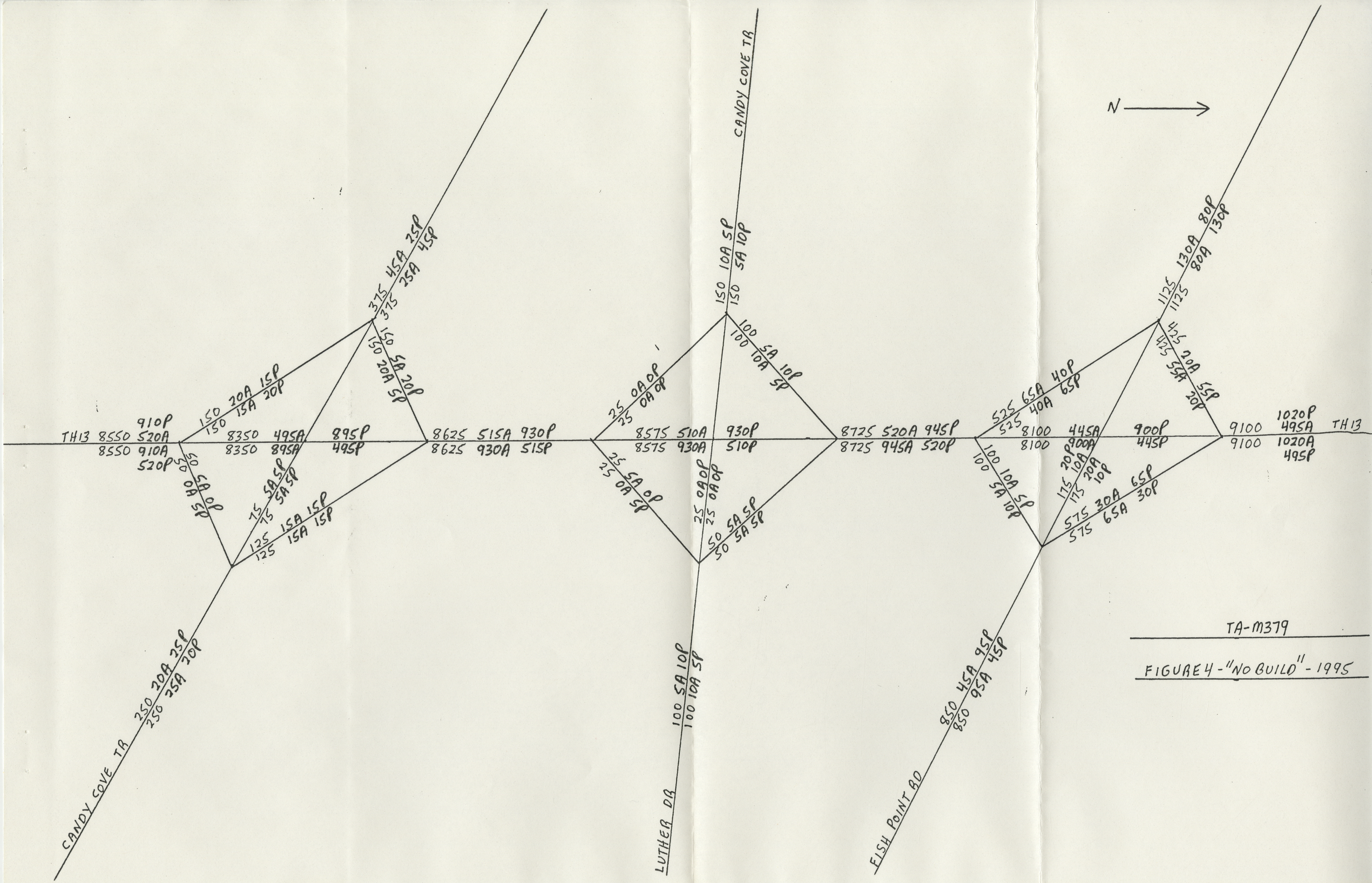
TA-M379

FIGURE 2-"NO BUILD"-1995



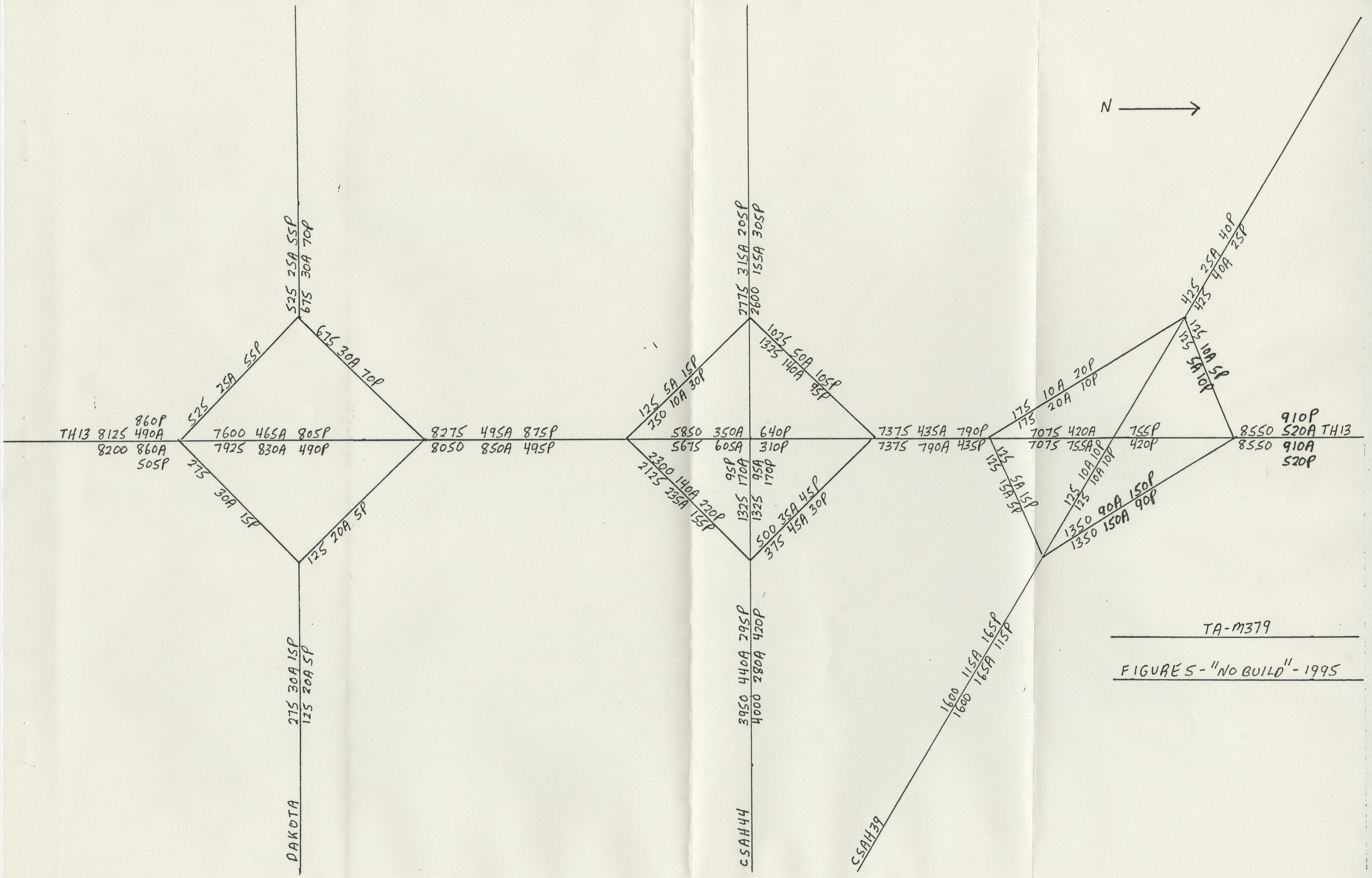
TA-M379

FIGURE 3 - "NO BUILD" - 1995



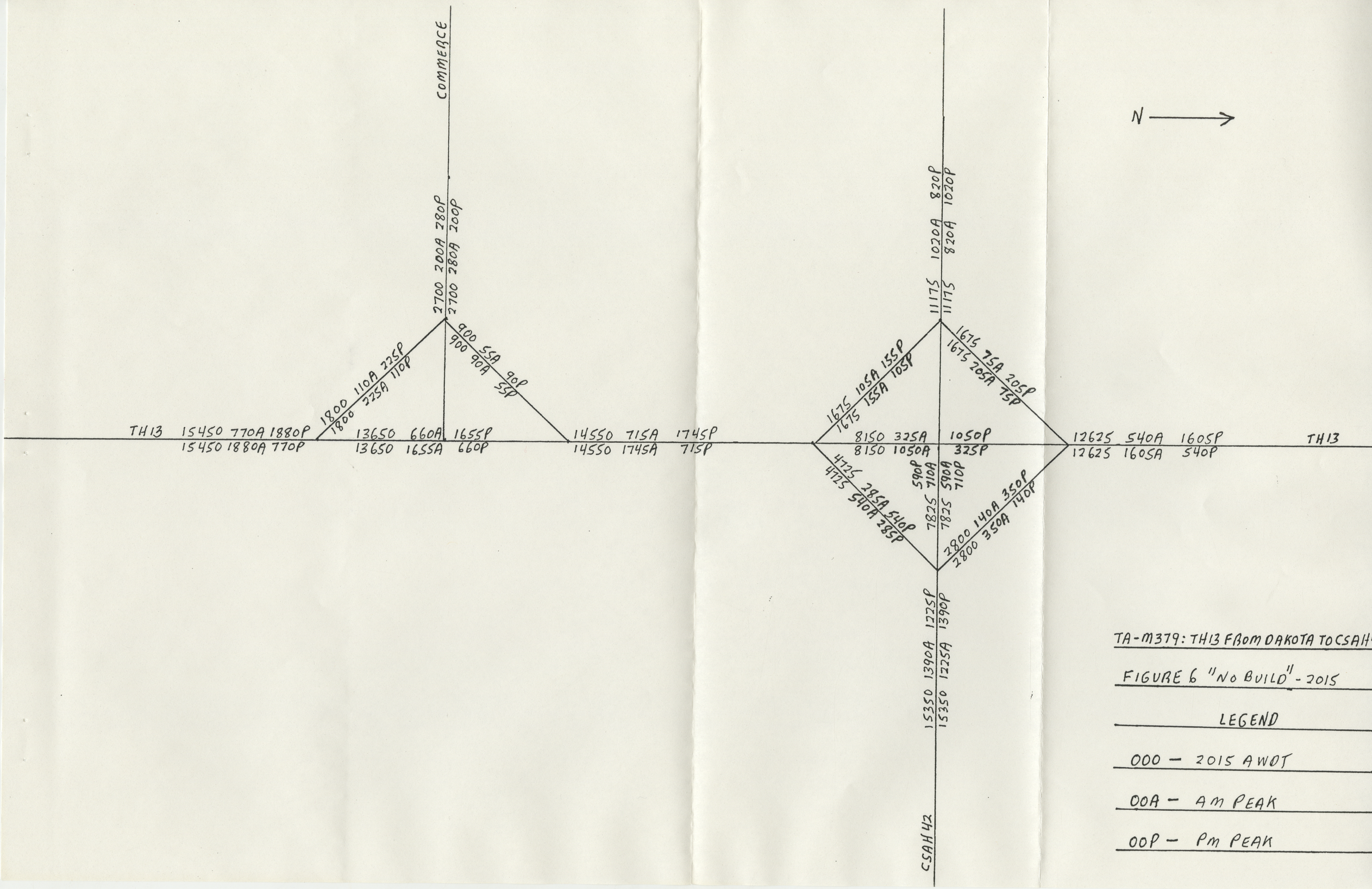
TA-M379

FIGURE 4 - "NO BUILD" - 1995



TA-M379

FIGURE 5 - "NO BUILD" - 1995



TA-M379: TH13 FROM DAKOTA TO CSAH 42

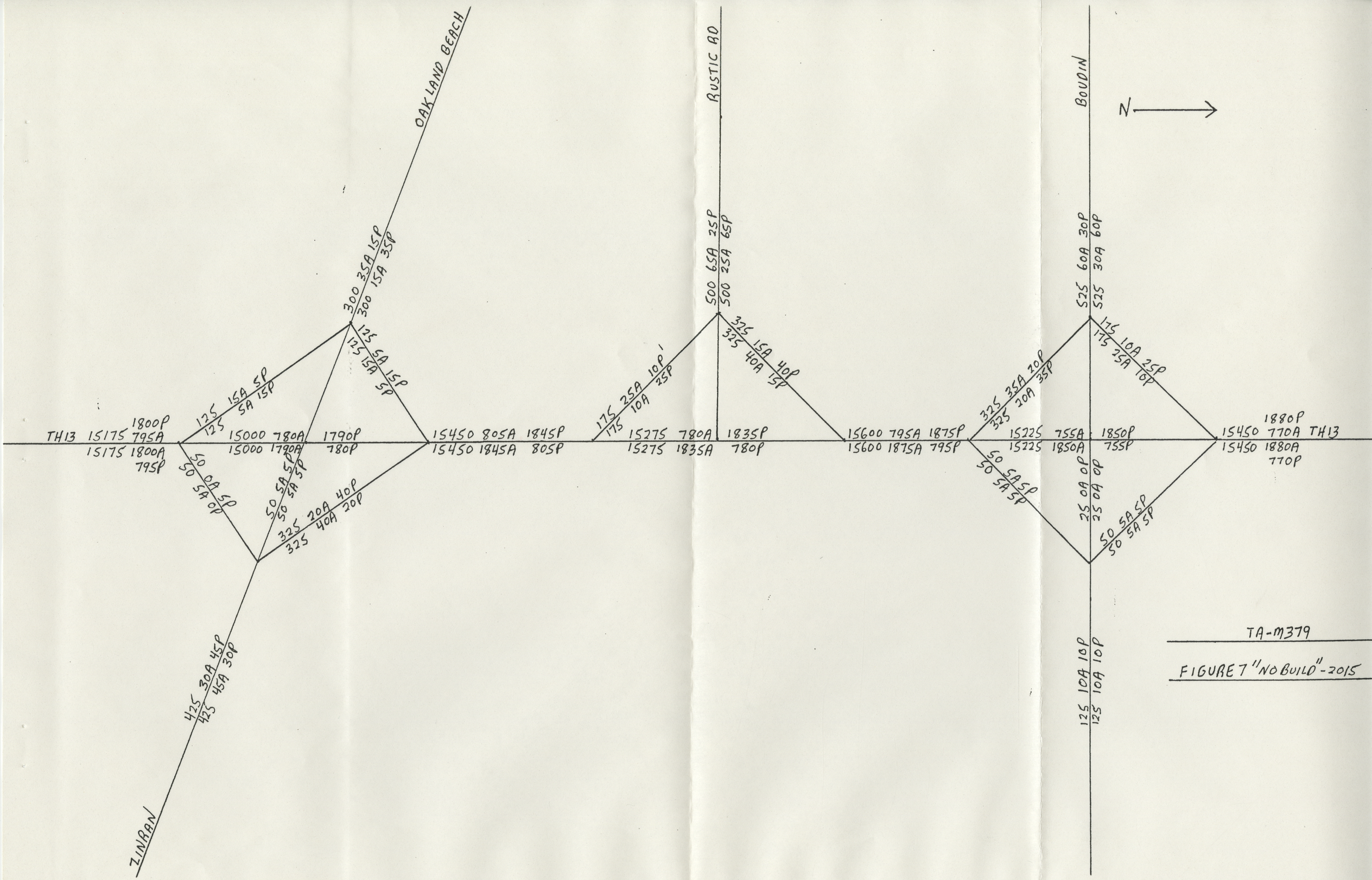
FIGURE 6 "NO BUILD" - 2015

LEGEND

000 – 2015 AWDT

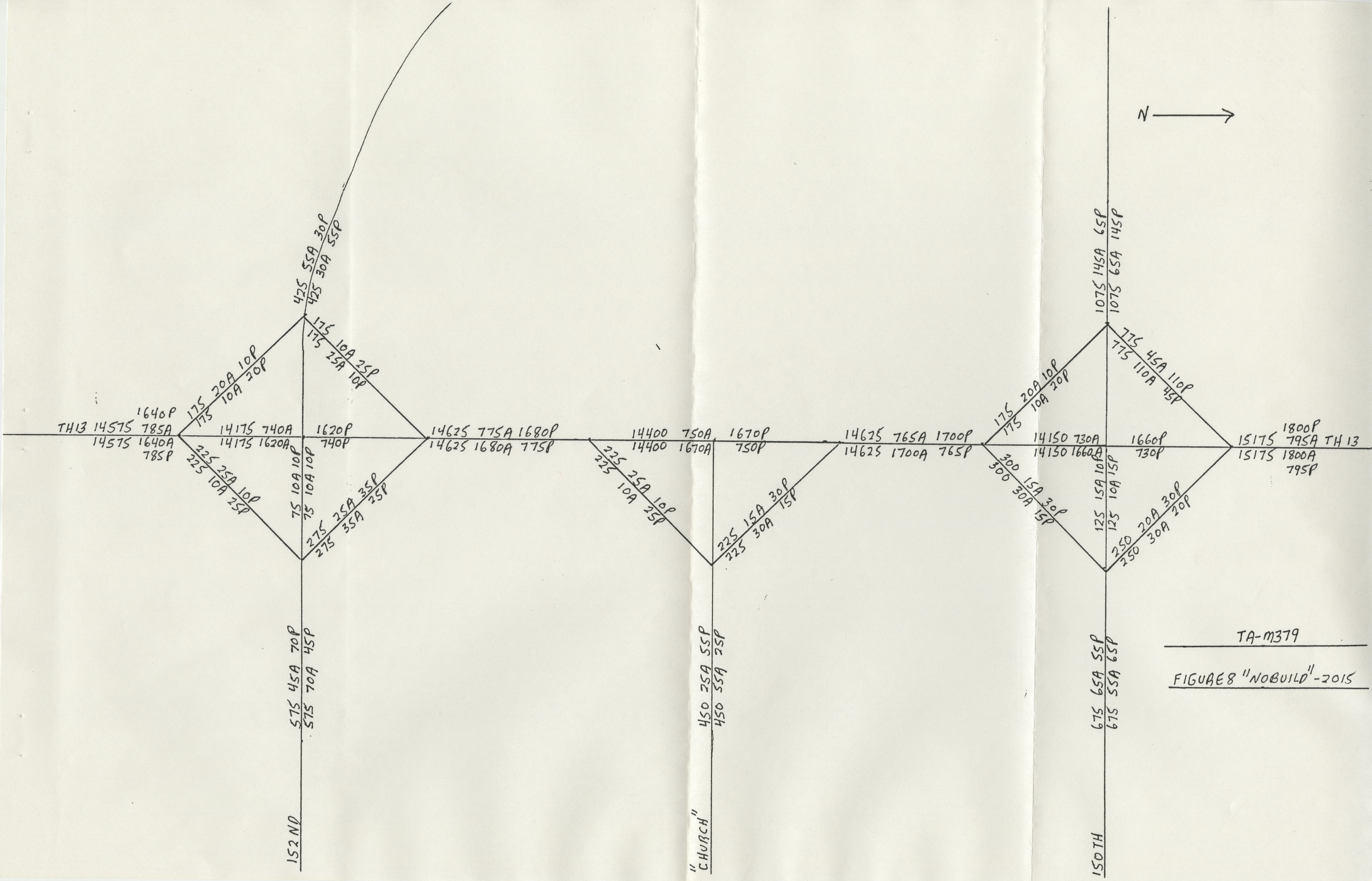
00A – AM PEAK

00P – PM PEAK



TA-M379

FIGURE 7 "NO BUILD" - 2015

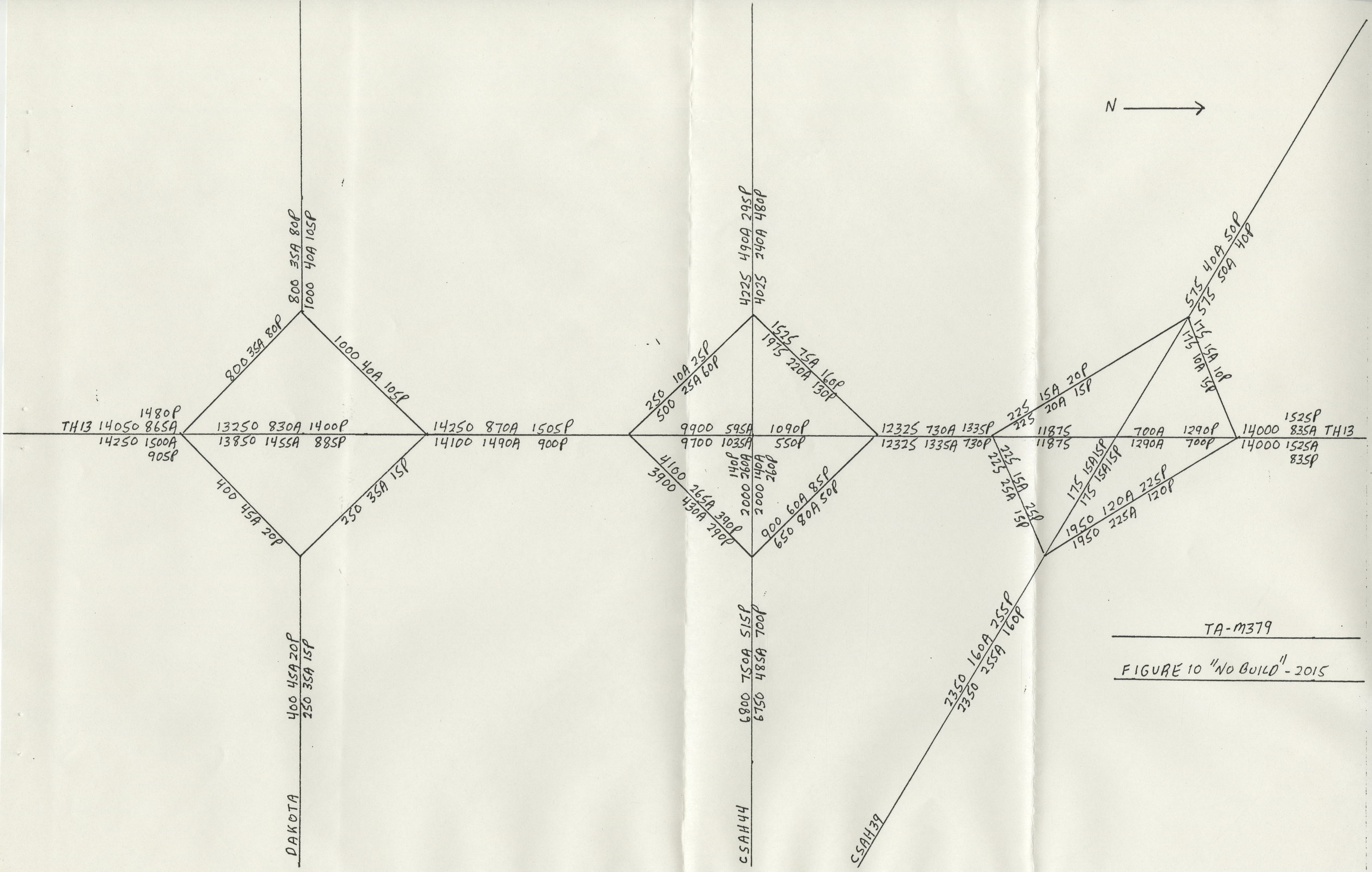


TA-M379

FIGURE 8 "NOBUILD"-2015

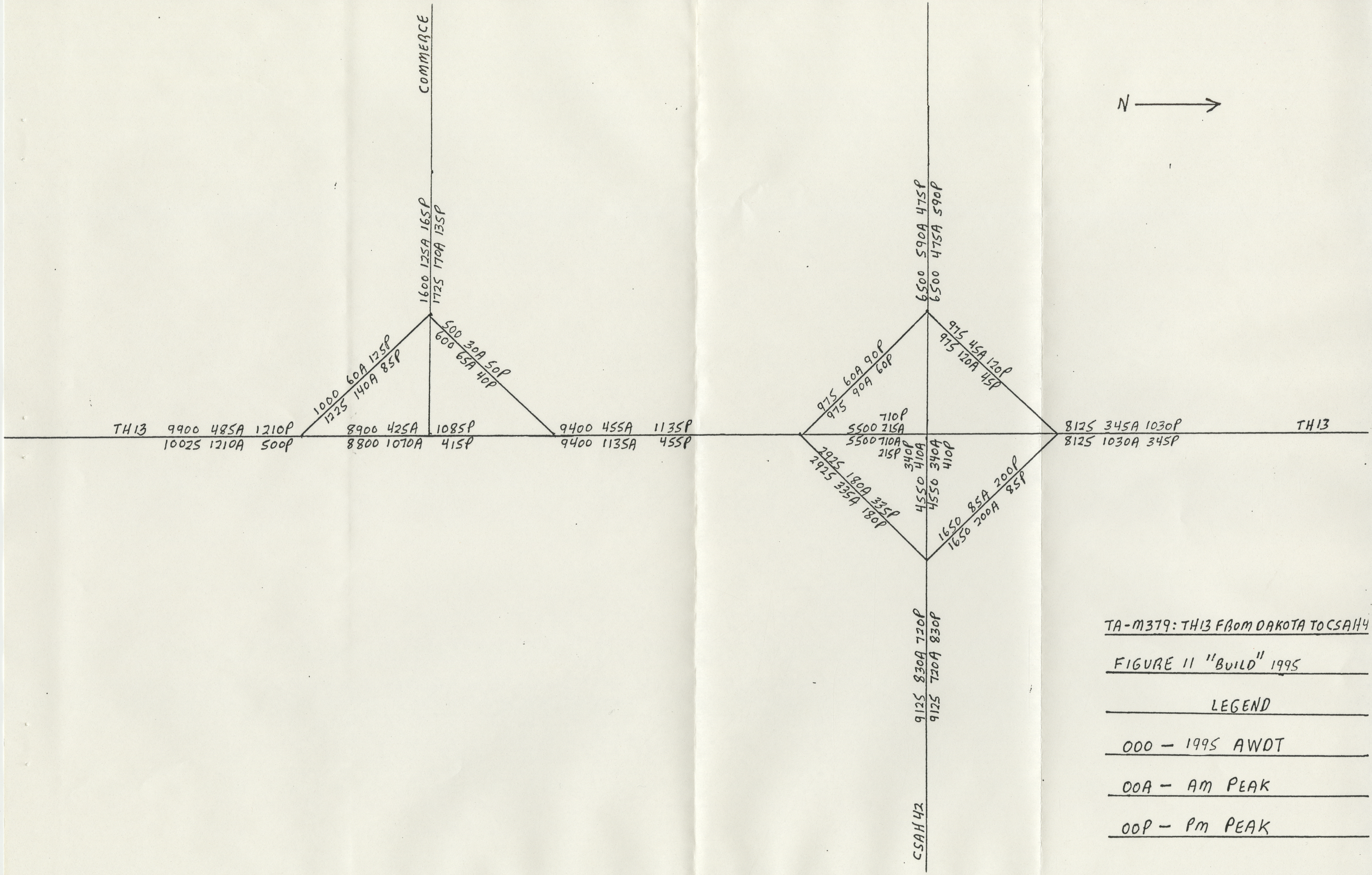
TA-M379

FIGURE 9 "NO BUILD" - 2015



TA-M379

FIGURE 10 "NO BUILD" - 2015



TA-M379: TH13 FROM DAKOTA TO CSAH 4

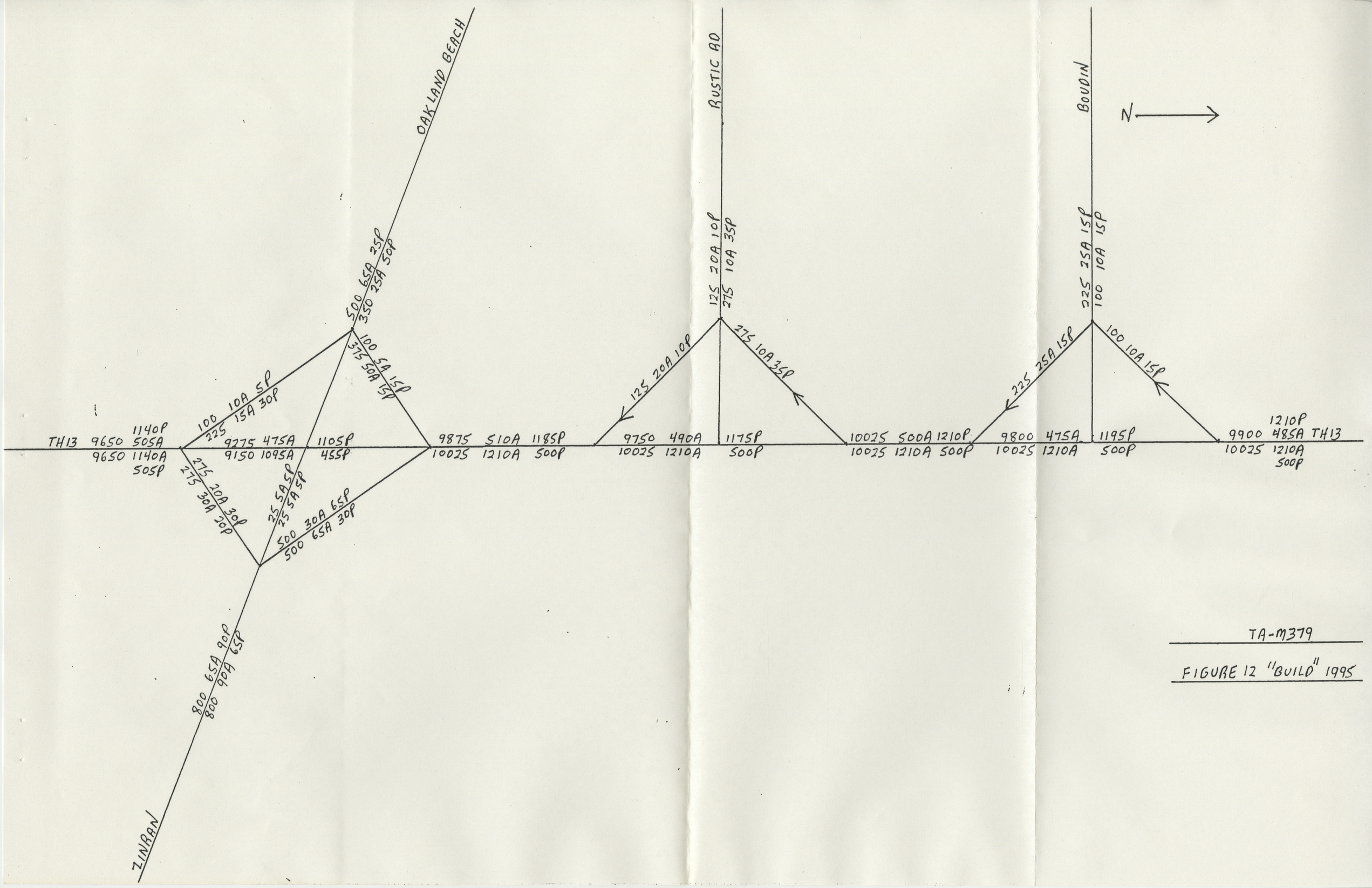
FIGURE 11 "BUILD" 1995

LEGEND

000 – 1995 AWDT

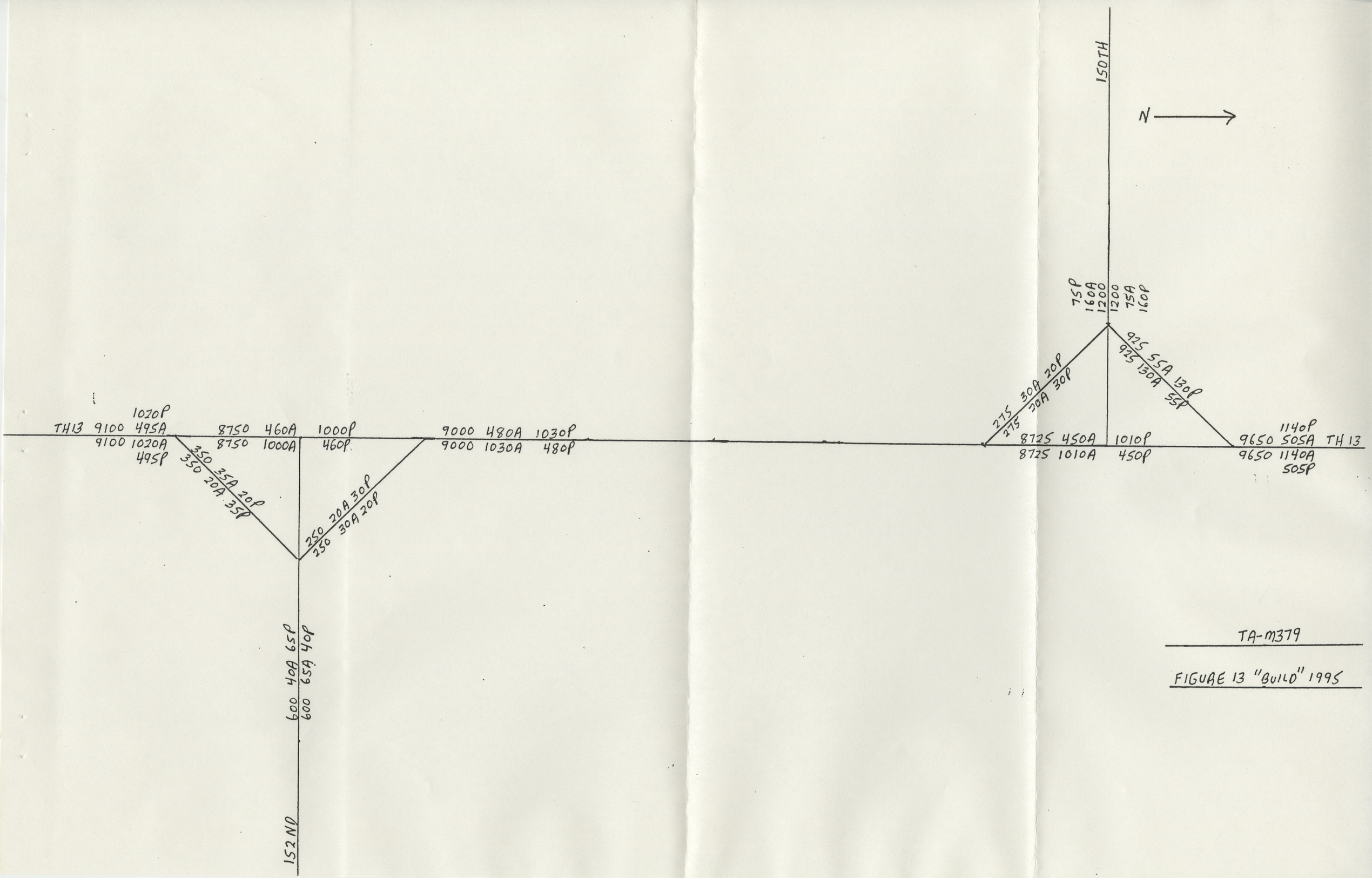
00A – AM PEAK

00P – PM PEAK



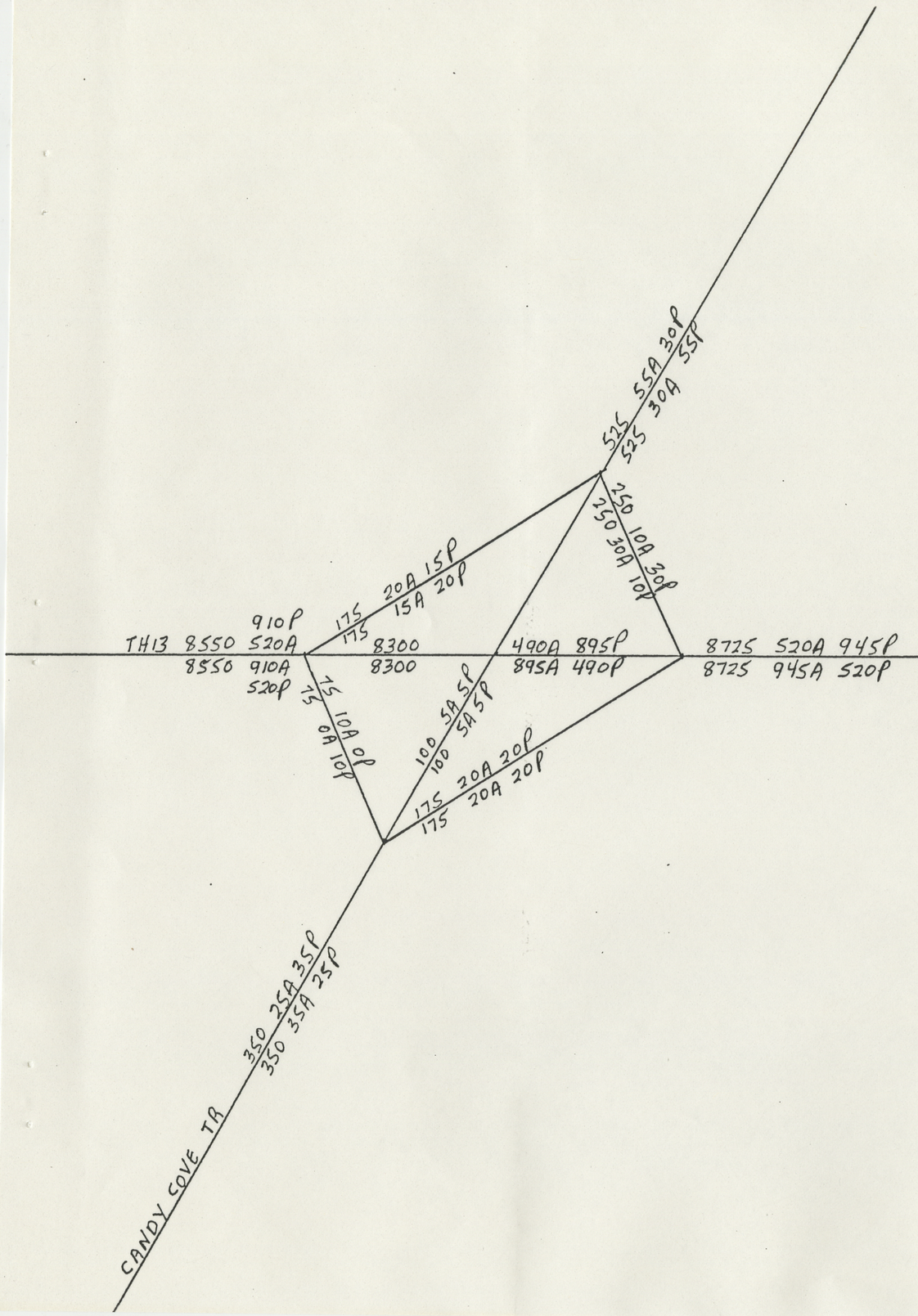
TA-M379

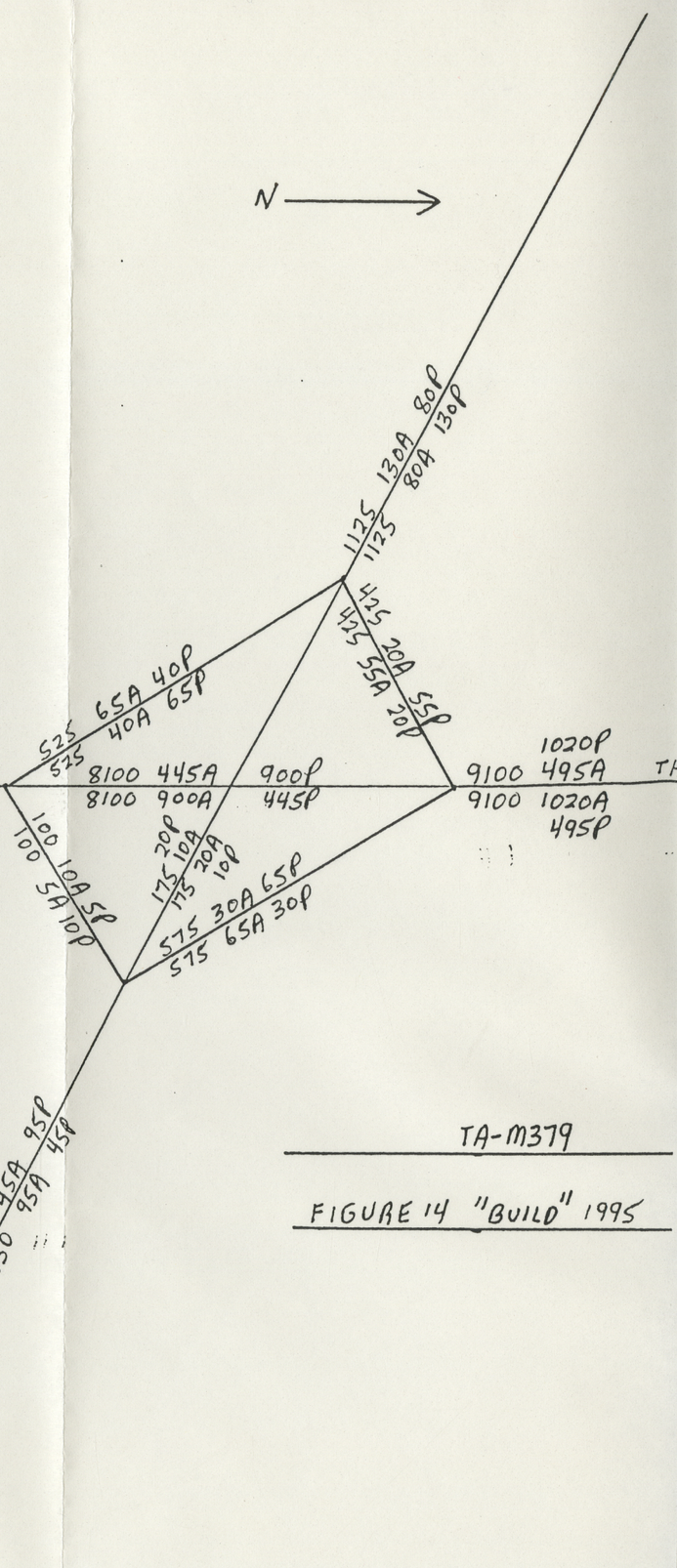
FIGURE 12 "BUILD" 1995



TA-M379

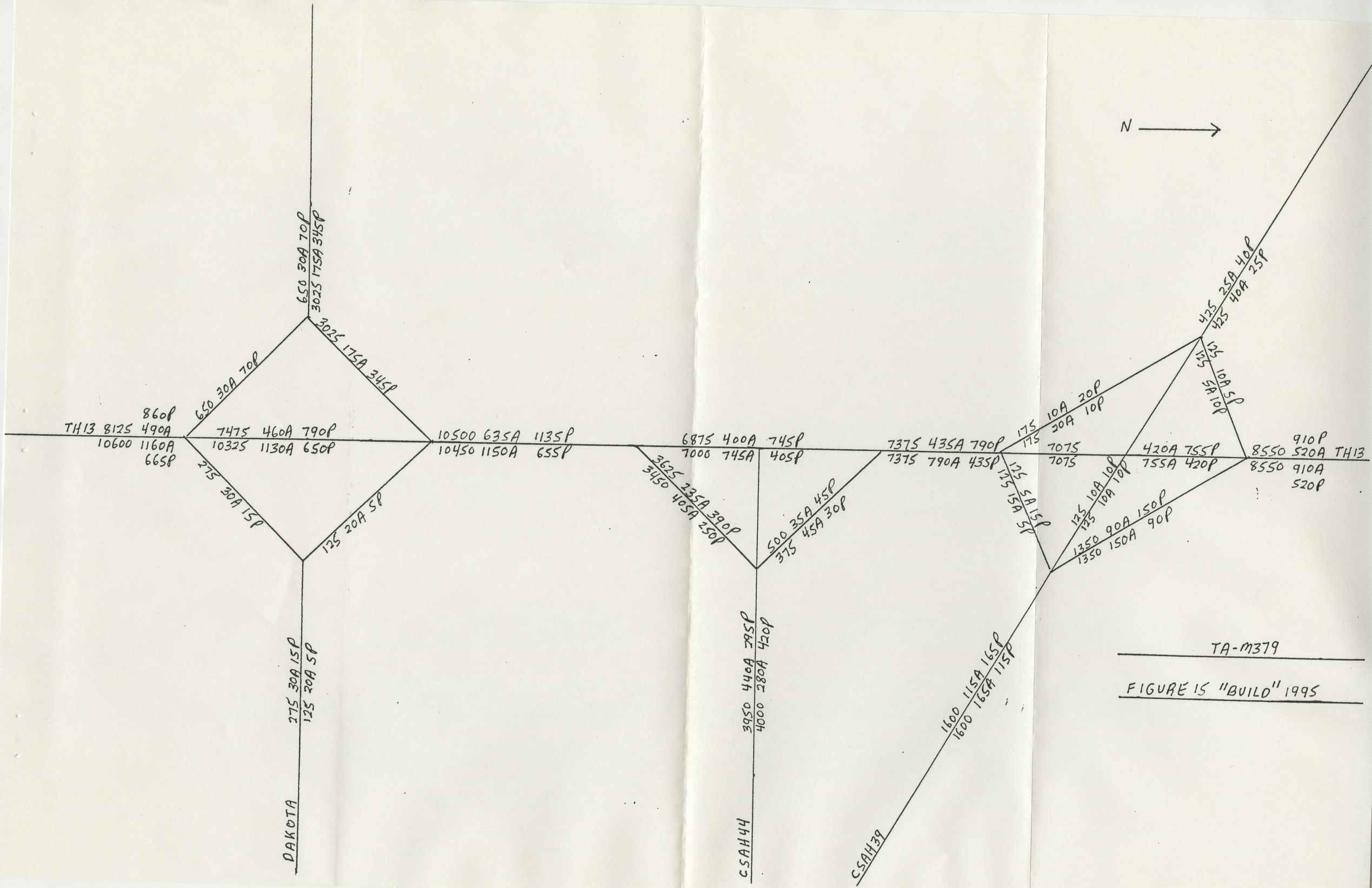
FIGURE 13 "BUILD" 1995





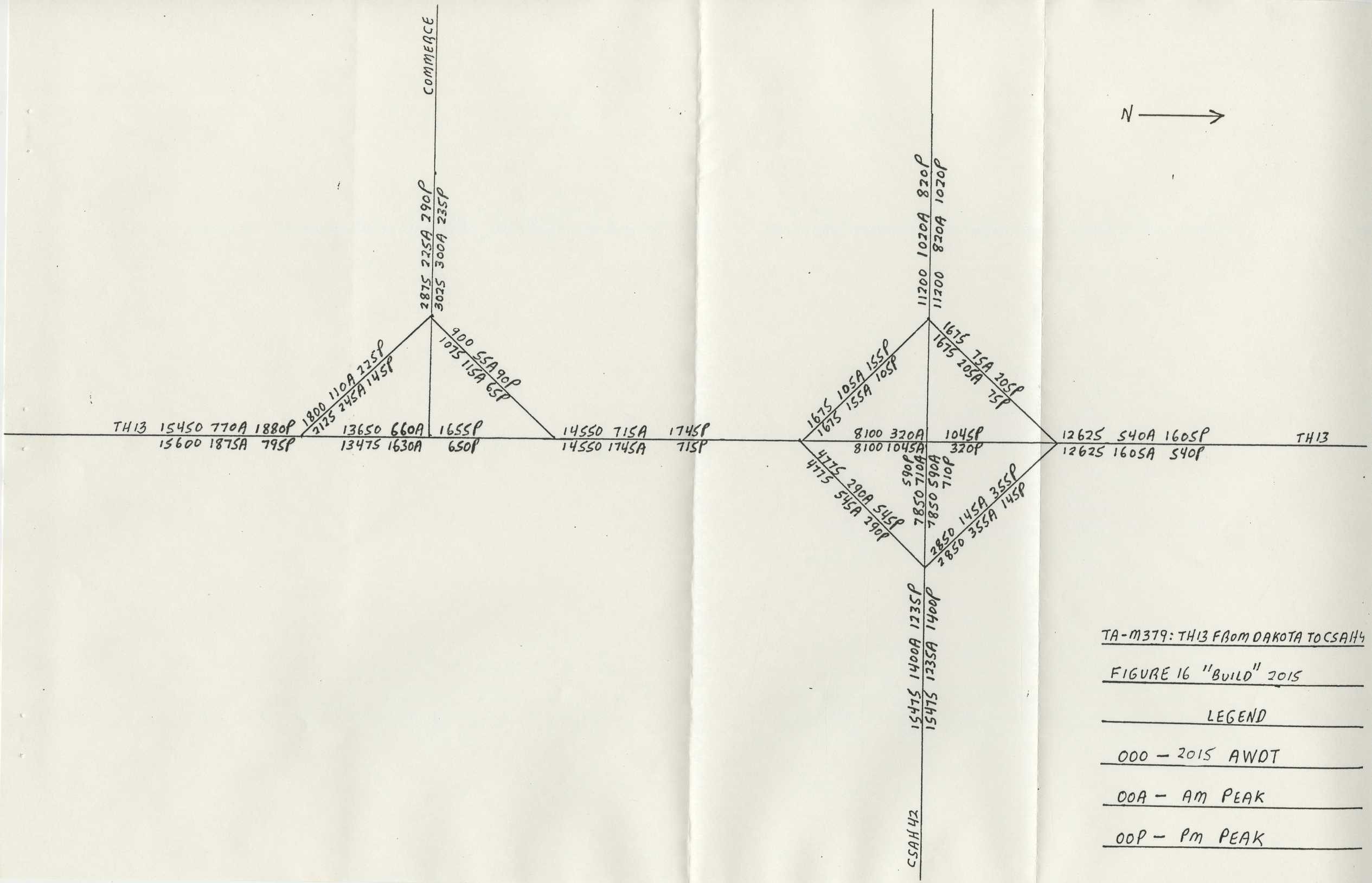
TA-M379

FIGURE 14 "BUILD" 1995



TA-M379

FIGURE 15 "BUILD" 1995



TA-M379: TH13 FROM DAKOTA TO CSAH 4

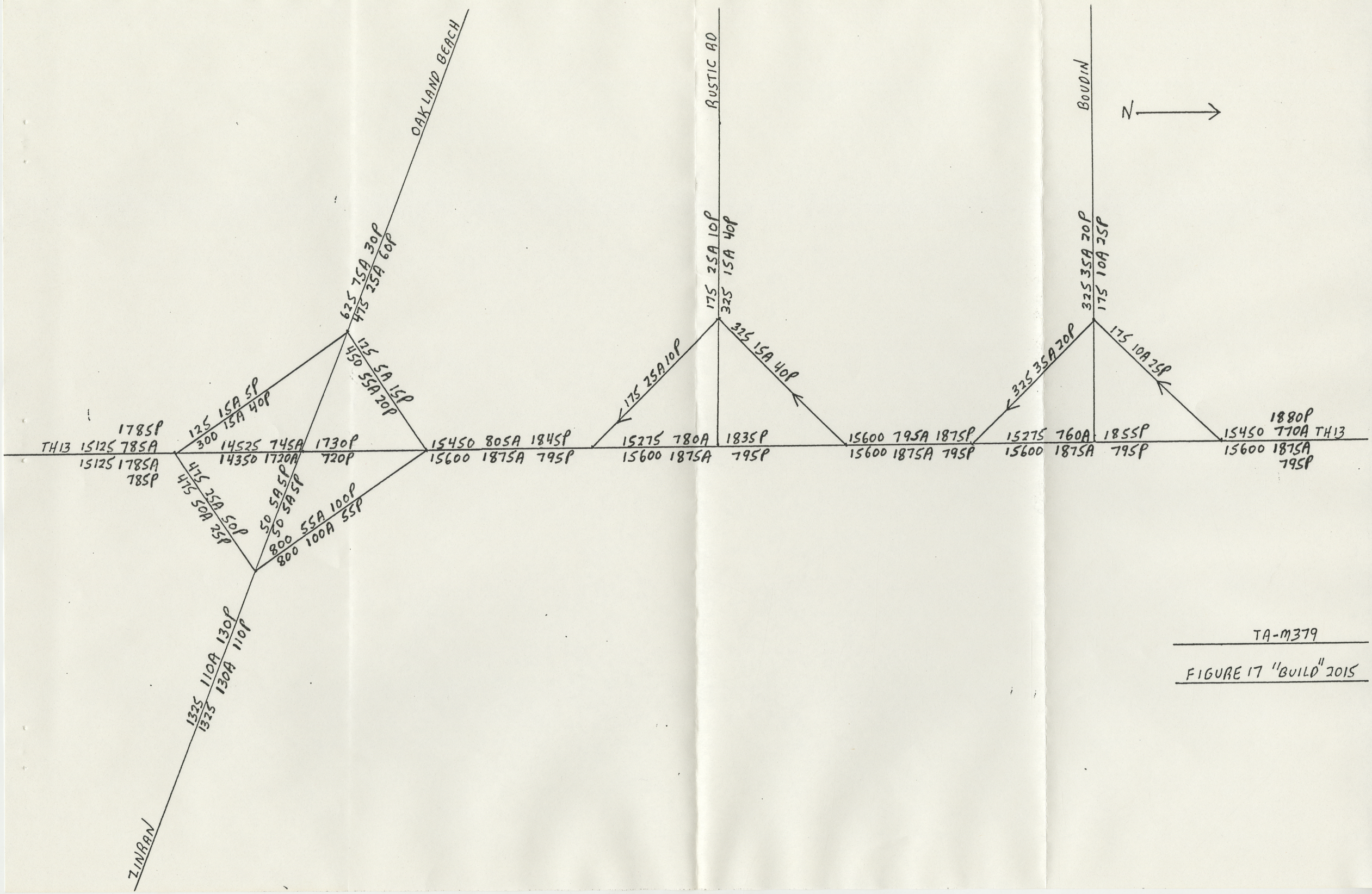
FIGURE 16 "BUILD" 2015

LEGEND

000 – 2015 AWDT

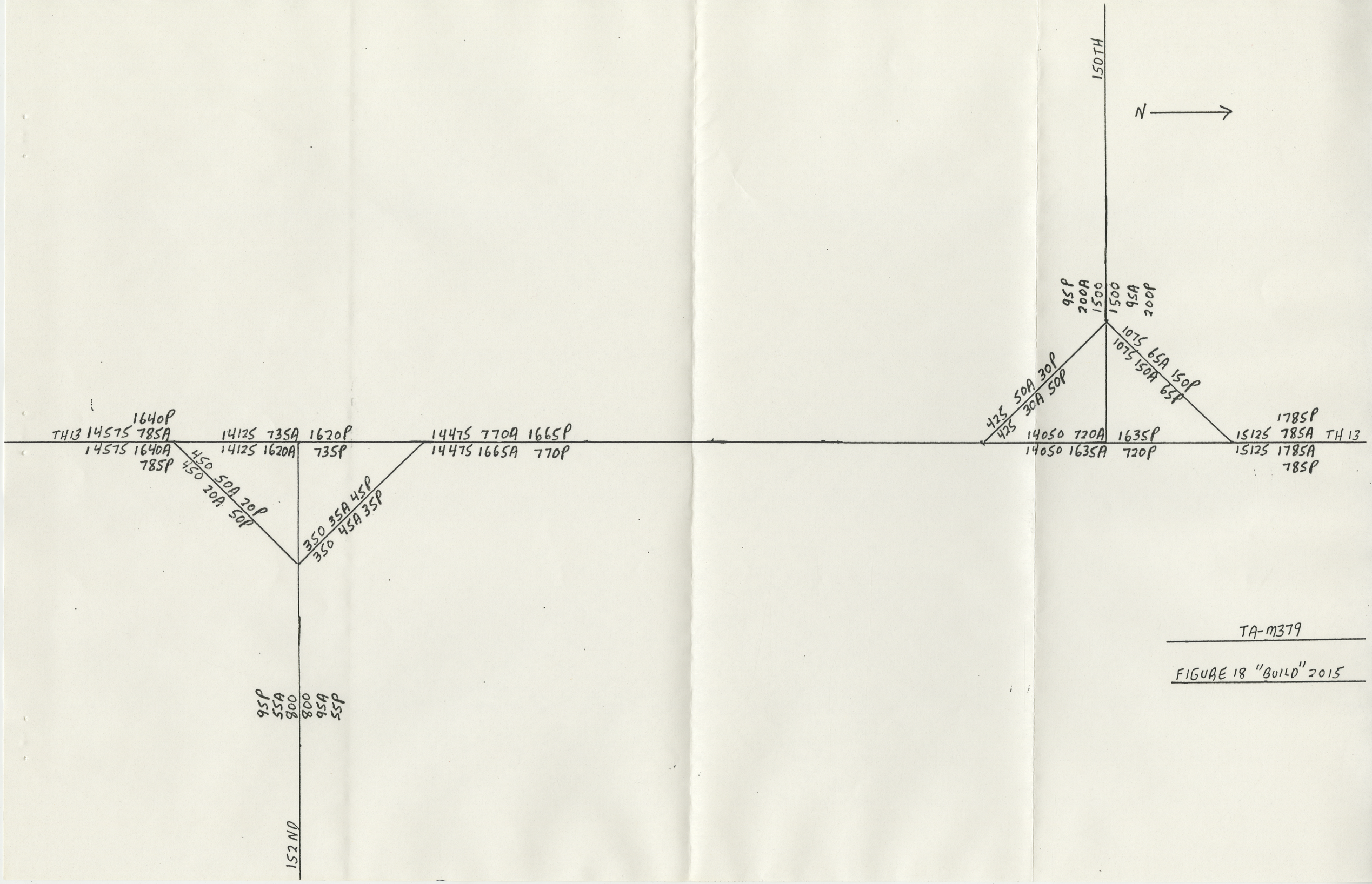
00A – AM PEAK

00P – PM PEAK



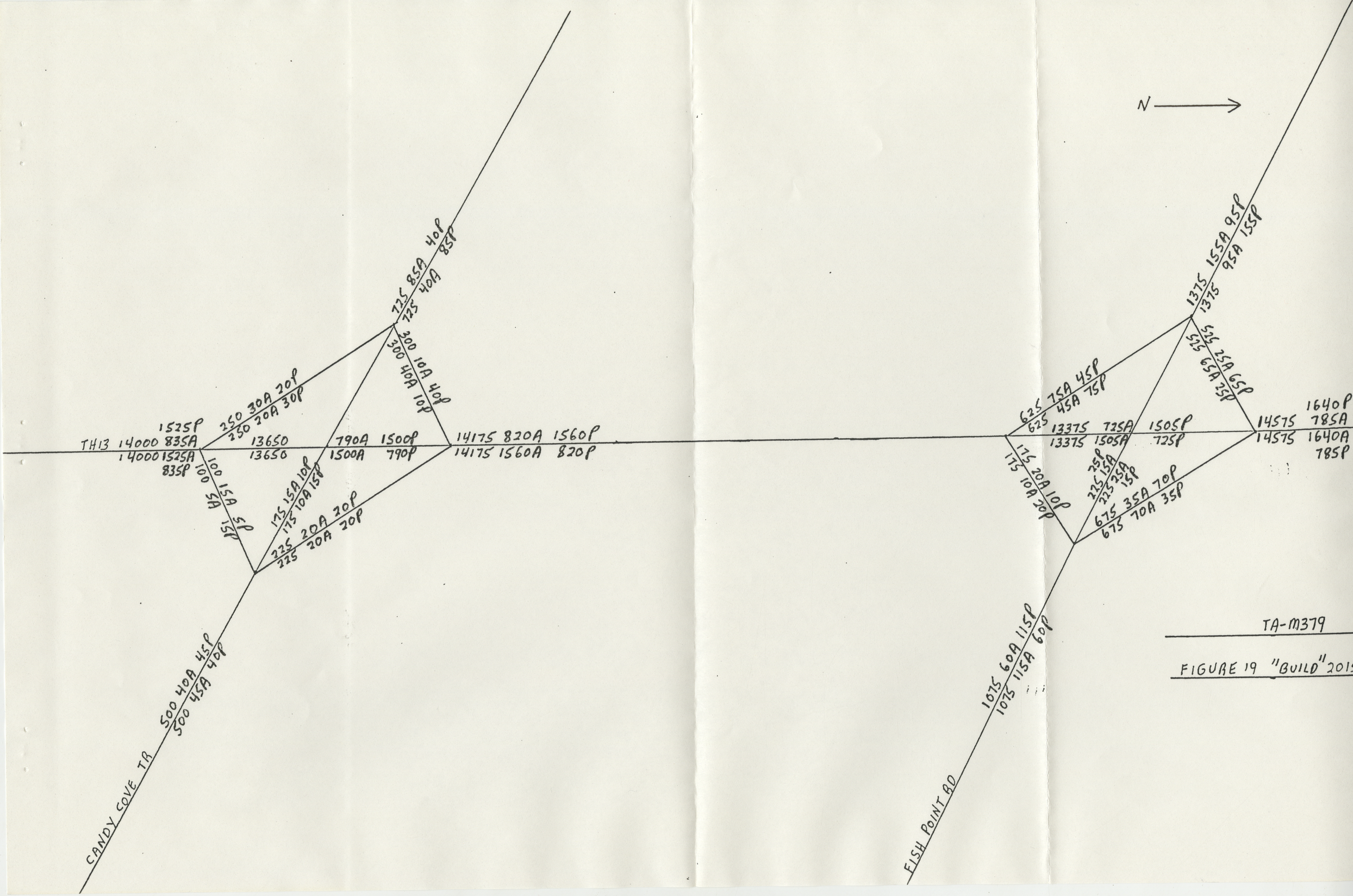
TA-M379

FIGURE 17 "BUILD" 2015



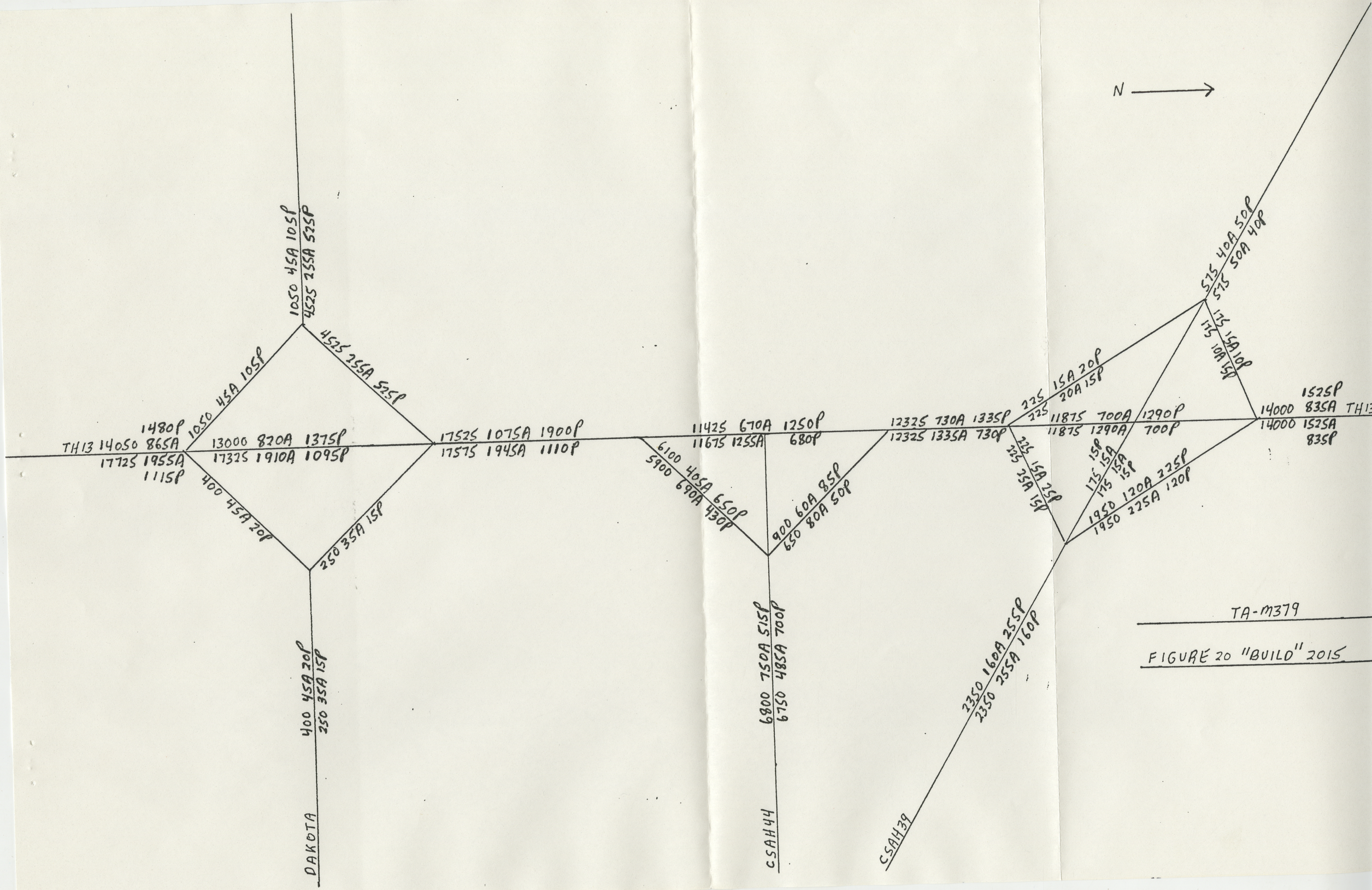
TA-M379

FIGUAE 18 "BUILD" 2015



TA-M379

FIGURE 19 "BUILD" 2015



TA-M379

FIGURE 20 "BUILD" 2015

CUMULATIVE ESAL REPORT DATE: 1-3-91

ROUTE #: TH 13 DISTRICT: METRO SP#: 7001-64

FORECAST #: TA-M379 COUNTY: SCOTT MILES:

DESCRIPTION: BUILD OPTION, DAKOTA TO CSAH 42 (RUSTIC TO BOUDIN)

AUTHOR'S DISTRICT: ---->C.O. AUTHOR: JIM PAGE

TRAFFIC SUMMARY

BASE YEAR NUMBER OF LANES (two way): 4

BASE YEAR ---------->	1995 DESIGN YEAR ------> 2015	GROWTH / YR (SIMPLE %)
AADT: two-way	20,050 / 31,200	2.8%
design-lane	9,020 / 14,040	2.8%
HCADT: two-way	1,710 / 2,620	2.7%
SINGLE UNITS: two-way	910 / 1,420	2.8%
TST'S: two-way	677 / 1,006	2.4%

ESAL SUMMARY

ANNUAL DESIGN LANE ESAL

FLEXIBLE:	265,749	398,701 +
RIGID:	411,074	614,937 +

CUMULATIVE DESIGN-LANE ESALS (10 TON DESIGN)

DESIGN YEAR	DESIGN-LANE TST'S	ESALS FLEXIBLE	RIGID
2005	379	3,684,000	5,692,000
2010	416	5,656,000	8,736,000
2015	453	7,814,000	12,066,000
** OR ** DESIGN YEAR			
2016	460	7,970,000	12,306,000
2017	468	8,127,000	12,545,000
2018	475	8,283,000	12,785,000
2019	482	8,439,000	13,025,000
2020	490	8,596,000	13,265,000

35 YEAR CUMULATIVE ESAL USING--> 1995 AS A BASE YEAR

2030	15,406,000	23,767,000

APPROVED BY: George M Pepion DATE: 1-8-91

(FOR PROJECT AADTS AND DESIGN HOUR VOLUMES PLEASE REFER TO PREVIOUSLY APPROVED FORECASTS OR ATTACHED TRAFFIC FLOW DIAGRAMS.)

CUMULATIVE ESALS WORKSHEET SEGMENT A

SP#: 7001-64

ROUTE: TH 13 # LANES: 4 DATE: 1-3-91

LOCATION: BUILD OPTION, DAKOTA TO CSAH 42 (RUSTIC TO BOUDIN)

VCL SITE #: 9865

	YEAR	AADT	INIT CALC HCADT	CONSTRN HCADT	INIT CALC 5AX TST	CONSTRAIN 5AX TST
VEH.CLASS YR.:	1988	10600	1070	0	----	---
BASE YEAR:	1995	12700	1280		584	
FORECAST YEAR:	2015	18600	1880		856	

BASE YEAR PROPORTIONS		BASE YR. VOLUME	% TREND	FUTURE %	FUTURE VOL.
2AX-6TIRE SU	3.4%	431	1	3.4%	633
3AX+ SU	1.3%	165	1	1.3%	242
3AX TST	0.2%	25	1	0.2%	37
4AX TST	0.2%	25	1	0.2%	37
5AX+ TST	0.0%	0	1	0.0%	0
(5AX+ TST MAX)	3.1%	393	1	3.1%	577
(5AX+ TST OTH)	1.5%	190	1	1.5%	279
TR TR, BUSES	0.3%	38	1	0.3%	56
TWIN TRAILERS	0.1%	13	1	0.1%	19

SUMMARIES:		AADT	HCADT	HCADT %	20 YR DESIGN LANE CUMULATIVE ESAL
1988	COUNT:	10600	1070	10.1%	! !
1995	FORECAST:	12700	1280	10.1%	**********
2015	FORECAST:	18600	1880	10.1%	FLEXIBLE RIGID
DESIGN LANE FACTOR:		0.45			6,657,000 10,526,000
					**********

ADDITIONAL OUTPUTS:

	BASE %	FORECAST %	FLEXIBLE AND RIGID ESAL FACTORS	
2AX-6TIRE SU	3.4%	3.4%	0.25	0.24
3AX+ SU	1.3%	1.3%	0.58	0.85
3AX TST	0.2%	0.2%	0.39	0.37
4AX TST	0.2%	0.2%	0.51	0.53
5AX+ TST	0.0%	0.0%	1.13	1.89
(5AX+ TST MAX)	3.1%	3.1%	2.4	4.07
(5AX+ TST OTH)	1.5%	1.5%	0.87	1.44
TR TR, BUSES	0.3%	0.3%	0.57	0.74
TWIN TRAILERS	0.1%	0.1%	2.4	2.33

CUMULATIVE ESAL WORKSHEET SEGMENT B

SP#: 7001-64

ROUTE: TH 13 # LANES: 4 DATE: 1-3-91

LOCATION: BUILD OPTION, DAKOTA TO CSAH 42 (RUSTIC TO BOUDIN)

	YEAR	AADT			CALCULATED HCADT	CONSTRAIN HCADT
BASE YEAR:	1995	20050	7,350	DIFFERENCE	1710	0
FORECAST YEAR:	2015	31200	12,600	DIFFERENCE	2620	0

INCREMENTAL HCADT ON SEGMENT B (BASED ON AVERAGE CSAH % DISTRIBUTIONS)

BASE YEAR PROPORTIONS		BASE YR. VOLUME	% TREND	FUTURE %	FUTURE VOL.
2AX-6TIRE SU	2.6%	191	1	2.6%	328
3AX+ SU	1.7%	125	1	1.7%	214
3AX TST		0	1	0.0%	0
4AX TST	0.1%	7	1	0.1%	13
5AX+ TST	0.5%	37	1	0.5%	63
(5AX+ TST MAX)		0	1	0.0%	0
(5AX+ TST OTH)		0	1	0.0%	0
TR TR, BUSES	1.0%	74	1	1.0%	126
TWIN TRAILERS		0	1	0.0%	0

SUMMARIES:		ADDED AADT	ADDED HCADT %	COMBINED HCADT %	20 YR DESIGN LANE CUMULATIVE ESAL
BASE YEAR:	1995	7350	5.9%	8.5%	! !
FORECAST YEAR:	2015	12600	5.9%	8.4%	**********
DESIGN LANE FACTOR:		0.45		FLEXIBLE	RIGID
			SEGMENT B INCREMENT ONLY:	1,157,000	1,540,000
			SEGMENT A + SEGMENT B:	7,814,000	12,066,000

ADDITIONAL OUTPUTS: **********

	BASE %	FORECAST %	FLEXIBLE AND RIGID ESAL FACTORS	
2AX-6TIRE SU	2.6%	2.6%	0.25	0.24
3AX+ SU	1.7%	1.7%	0.58	0.85
3AX TST	0.0%	0.0%	0.39	0.37
4AX TST	0.1%	0.1%	0.51	0.53
5AX+ TST	0.5%	0.5%	1.13	1.89
(5AX+ TST MAX)	0.0%	0.0%	2.4	4.07
(5AX+ TST OTH)	0.0%	0.0%	0.87	1.44
TR TR, BUSES	1.0%	1.0%	0.57	0.74
TWIN TRAILERS	0.0%	0.0%	2.4	2.33